

ABSTRACT OF THE DISCLOSURE

To develop a small quantity of various kinds of semiconductor devices in a short time and to realize a photomask suitable to be manufactured at a low cost. A shade pattern of a photomask is constituted by containing nanoparticles such as carbon in an organic film such as a photoresist film. A pattern is transferred to a photoresist on a semiconductor wafer by means of the reduction projection exposure using the photomask. At the time of the above exposure, it is possible to select exposure light within a range of wide wavelengths including i-line, KrF excimer laser beam, ArF excimer laser beam, or the like.

10026923-1220204